

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Greg Denton

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley

TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID:

K00002289

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002289001

Project Name:

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.: Station No.:

EMORY012.1RO

Date/Time Collected:

04/16/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received: Received By:

04/16/2009

15:16

E McCrary

Field Determinations

pH: 7.98

Chlorine, residual:

692

pH Units

Conductivity:

uMHO

Temperature: Dissolved Oxygen: 11.92

11.61

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	MQL	ANALYZED BY:	DATE			
Total Alkalinity	10	mg/L	3.8	10	M Chen	4/21/2009	

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Calcium hardness	12	mg/L	0.7	1	M Chen	4/20/2009	

TEST: Residue, Settleable	ME.	0F			·		
ANALYTE	RESULT	UNITS	MDL MO	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009	

TEST: Residue, Suspended	0D					
ANALYTE	RESULT UNITS MDL		MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	4/17/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289002

Project Name:

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY002.1RO

Date/Time Collected:

04/16/2009 11:20

Sampler's Name:

Geoff Klein

County: Sample Matrix: **ROANE - 73**

EFO:

Water Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.44

pH Units

uMHO

mg/L

Chlorine, residual:

Conductivity:

660 12.51

Temperature: Dissolved Oxygen: 11.24

Other:

Flow:

CFS

TEST: Alkalinity, Total	MET	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MQL	ANALYZED BY:	DATE	
Total Alkalinity	14	mg/L	3.8	10	M Chen	4/21/2009

TEST: Hardness, Calcium	MET	METHOD: SM 3500-Ca D				
ANALYTE	RESULT	MQL	ANALYZED BY:	DATE		
Calcium hardness	14	mg/L	0.7	1	M Chen	4/20/2009

TEST: Residue, Settleable	ME.	THOD: SM 254					
ANALYTE	RESULT	UNITS	MDL M		ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009	

TEST: Residue, Suspended METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Suspended Solids	70	mg/L	10	10	A Peeples	4/17/2009	

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289003

Project Name:

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY001.7RO

Date/Time Collected: Sampler's Name:

04/16/2009 11:35

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC TDEC-WPC

Agency Invoiced: **Priority Date:**

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

Chlorine, residual:

Conductivity:

663

uMHO

pH Units

Temperature:

11.81 **Dissolved Oxygen: 11.51**

7.18

mg/L

Other:

Flow:

CFS

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	13	mg/L	3.8	10	M Chen	4/21/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D						
ANALYTE	RESULT	MQL	ANALYZED BY:	DATE			
Calcium hardness	12	mg/L	0.7	1	M Chen	4/20/2009	

TEST: Residue, Settleable	ME						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	13	mg/L	10	10	A Peeples	4/17/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289004

Project Name:

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY000.1RO

Date/Time Collected: Sampler's Name:

04/16/2009 11:47

County:

Geoff Klein **ROANE - 73**

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:**

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009

15:16

Received By:

E McCrary

рН:	7.13	pH Units
Chlorine, residua	al:	
Conductivity:	660	uMHO
Tamananatuna	11 00	

Temperature:

Field Determinations

Dissolved Oxygen: 11.38 Other:

mg/L

Flow: **CFS**

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	13	mg/L	3.8	10	M Chen	4/21/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	14	mg/L	0.7	1	M Chen	4/20/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009

TEST: Residue, Suspended	METHOD: SM 2540D							
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE		
Total Suspended Solids	15	mg/L	10	10	A Peeples	4/17/2009		

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289005

Project Name:

Sample Description:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC002.3RO

Date/Time Collected:

04/16/2009 11:58

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

Billing Code: Send Report To:

TDEC-WPC

Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

04/16/2009

15:16

Received By:

E McCrary

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	40	mg/L	3.8	10	M Chen	4/21/2009

Field Determinations

Dissolved Oxygen: 11.30

Chlorine, residual:

Conductivity:

Temperature:

7.20

675

12.76

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

TEST: Hardness, Calcium	MET	METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	35	mg/L	0.7	. 1	M Chen	4/20/2009

TEST: Residue, Settleable	, Settleable METHOD: SM 2540F						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009	

TEST: Residue, Suspended	, Suspended METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	18	mg/L	10	10	A Peeples	4/17/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289006

Project Name:

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Field Determinations

Dissolved Oxygen: 11.70

Conductivity:

Temperature:

7.45

768

13.38

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

CLINC004.5RO

Date/Time Collected:

04/16/2009 12:09

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

TEST: Alkalinity, Total	MET	METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	M Chen	4/21/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	85	mg/L	0.7	1	M Chen	4/20/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	4/17/2009

TEST: Residue, Suspended	ME.	THOD: SM 254	0D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	12	mg/L	10	10	A Peeples	4/17/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

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Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

Lab ID: K00002289

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

Billing Code:

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002289001

Project Name:

Emory River mile 12.1

Sample Description: Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY012.1RO

Date/Time Collected:

04/16/2009 10:18

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced:

327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.98

pH Units

Chlorine, residual:

Conductivity:

692

uMHO

Temperature:

11.61

mg/L

Dissolved Oxygen: 11.92 Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/20/2009				A Wilson	4/20/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE
Iron	340	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	ME ⁻	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	340	μg/L	6.4	10	M Pattanayek	4/20/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/21/2009
Barium	29	μg/L	2.5	5	M Pattanayek	4/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/21/2009
Cobalt	0.39J	μg/L	0.04	1	M Pattanayek	4/21/2009
Copper	1.8	μg/L	0.38	1	M Pattanayek	4/21/2009
Lead	0.39J	μg/L	0.10	1	M Pattanayek	4/21/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	4/21/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	4/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/21/2009
Thallium	0.07J	μg/L	0.03	1	M Pattanayek	4/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/21/2009
Zinc	7.7	μg/L	1.9	5	M Pattanayek	4/21/2009

K00002289001

Project Name:

Sample Description: Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

1

Station No.:

EMORY012.1RO

Date/Time Collected:

04/16/2009 10:18

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009

15:16

Received By:

E McCrary

Ciliorine, residua	41.	
Conductivity:	692	uMHO
Temperature:	11 61	

7.98

pH Units

mg/L

Temperature:

Field Determinations

Dissolved Oxygen: 11.92

Other:

Flow: **CFS**

TEST: Mercury	: Mercury METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.094J	μg/L	0.025	0.20	A Jeffries	4/22/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289002

Project Name:

Sample Description: Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

10.i Z

Station No.: EMORY002.1RO Date/Time Collected: 04/16/2009 11:20

Sampler's Name:

Geoff Klein

County: Sample Matrix:

ROANE - 73

EFO: Sampling Agency:

Water Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

15:16

Priority Date:

Date/Time Received: 04/16/2009

Received By: E McCrary

Field Determinations

pH: 7.44

Chlorine, residual:

Conductivity: 660

Temperature: 12.51

Dissolved Oxygen: 11.24 mg/L

Other:

Flow: CFS

pH Units

uMHO

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY					DATE	
Digestion Metals	04/20/2009				A Wilson	4/20/2009	

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DAT					DATE
Iron	1800	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	3600	μg/L	32.0	50	M Pattanayek	4/24/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/21/2009
Arsenic	11	μg/L	0.93	5	M Pattanayek	4/21/2009
Barium	100	μg/L	2.5	5	M Pattanayek	4/21/2009
Beryllium	0.46J	μg/L	0.11	1	M Pattanayek	4/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/21/2009
Chromium	3.6J	μg/L	2.0	5	M Pattanayek	4/21/2009
Cobalt	1.8	μg/L	0.04	1	M Pattanayek	4/21/2009
Copper	6.9	μg/L	0.38	1	M Pattanayek	4/21/2009
Lead	4.3	μg/L	0.10	1	M Pattanayek	4/21/2009
Manganese	36	μg/L	0.42	1	M Pattanayek	4/21/2009
Nickel	4.1	μg/L	0.25	1	M Pattanayek	4/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/21/2009
Thallium	0.24J	μg/L	0.03	1	M Pattanayek	4/21/2009
Vanadium	8.7	µg/L	3.4	5	M Pattanayek	4/21/2009
Zinc	11	µg/L	1.9	. 5	M Pattanayek	4/21/2009

K00002289002

Project Name:

Sample Description: Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected:

EMORY002.1RO

Sampler's Name:

04/16/2009 11:20 Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009

15:16

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.035J	μg/L	0.025	0.20	A Jeffries	4/22/2009

Field Determinations

Dissolved Oxygen: 11.24

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.44

660

12.51

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289003

Project Name:

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY001.7RO

Date/Time Collected: Sampler's Name:

04/16/2009 11:35

County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.18

pH Units

Chlorine, residual:

Conductivity:

663

uMHO

Temperature:

11.81

Dissolved Oxygen: 11.51

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/20/2009			,	A Wilson	4/20/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE
Iron	450	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	800	μg/L	6.4	10	M Pattanayek	4/20/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/21/2009
Barium	51	μg/L	2.5	5	M Pattanayek	4/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/21/2009
Cobalt	0.40J	μg/L	0.04	1	M Pattanayek	4/21/2009
Copper	3.0	μg/L	0.38	1	M Pattanayek	4/21/2009
Lead	0.81J	μg/L	0.10	1	M Pattanayek	4/21/2009
Manganese	31	μg/L	0.42	1	M Pattanayek	4/21/2009
Nickel	1.5	μg/L.	0.25	1	M Pattanayek	4/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/21/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	4/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/21/2009
Zinc	7.6	μg/L	1.9	5	M Pattanayek	4/21/2009

K00002289003

Project Name:

Sample Description: Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: EMORY001.7RO

Date/Time Collected:

04/16/2009 11:35

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.18

pH Units

Chlorine, residual:

Conductivity:

663

uMHO

mg/L

Temperature:

11.81

Dissolved Oxygen: 11.51 Other:

Flow:

CFS

TEST: Mercury	5.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.12J	µg/L	0.025	0.20	A Jeffries	4/22/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289004

Project Name:

Sample Description: Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.: Date/Time Collected:

EMORY000.1RO 04/16/2009 11:47

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.13

pH Units

Chlorine, residual:

Conductivity:

660

uMHO

Temperature: Dissolved Oxygen: 11.38

11.82

mg/L

Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/20/2009				A Wilson	4/20/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY:					DATE
Iron	600	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	MET	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	600	μg/L	6.4	10	M Pattanayek	4/20/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/21/2009
Barium	45	μg/L	2.5	5	M Pattanayek	4/21/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/21/2009
Cobalt	0.35J	μg/L	0.04	1	M Pattanayek	4/21/2009
Copper	2.7	μg/L	0.38	1	M Pattanayek	4/21/2009
Lead	0.76J	μg/L	0.10	1	M Pattanayek	4/21/2009
Manganese	30	μg/L	0.42	1	M Pattanayek	4/21/2009
Nickel	1.3	μg/L	0.25	1	M Pattanayek	4/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/21/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	4/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/21/2009
Zinc	5.1	μg/L	1.9	5	M Pattanayek	4/21/2009

K00002289004

Project Name:

Sample Description: Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

EMORY000.1RO

Date/Time Collected:

04/16/2009 11:47

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: Agency Invoiced: 327.34-20 TDEC-WPC TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

pH:

7.13

pH Units

uMHO

Chlorine, residual:

Conductivity:

660

Temperature: 11.82

Dissolved Oxygen: 11.38

mg/L

Other:

Flow:

CFS

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL.	MQL	ANALYZED BY:	DATE
Mercury	0.078J	μg/L	0.025	0.20	A Jeffries	4/22/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

Project Name:

Clinch River mile 2.3 near Hwy 70 bridge

Sampler Project Name: TVA Ash Spill

Project Site No.:

Sample Description:

Station No.: CLINC002.3RO

Date/Time Collected: Sampler's Name:

04/16/2009 11:58

County:

Geoff Klein

Sample Matrix: EFO:

ROANE - 73 Water

Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced: **Priority Date:**

TDEC-WPC

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field Determinations

7.20 pH:

Chlorine, residual:

Conductivity: 675

Temperature: 12.76

Dissolved Oxygen: 11.30

Other:

Flow:

CFS

pH Units

uMHO

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/20/2009				A Wilson	4/20/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT UNITS MDL MQL ANALYZED B					
Iron	650	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	700	μg/L.	6.4	10	M Pattanayek	4/20/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/21/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/21/2009
Barium	45	μg/L	2.5	5	M Pattanayek	4/21/2009
Beryllium	υ	μg/L	0.11	1	M Pattanayek	4/21/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/21/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/21/2009
Cobalt	0.45J	μg/L	0.04	1	M Pattanayek	4/21/2009
Copper	3.1	μg/L	0.38	1	M Pattanayek	4/21/2009
Lead	0.90J	μg/L	0.10	1	M Pattanayek	4/21/2009
Manganese	37	μg/L	0.42	1	M Pattanayek	4/21/2009
Nickel	1.6	μg/L	0.25	1	M Pattanayek	4/21/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/21/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/21/2009
Thallium	U	μg/L	0.03	1	M Pattanayek	4/21/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/21/2009
Zinc	6.2	μg/L	1.9	5	M Pattanayek	4/21/2009

K00002289005

Project Name:

Clinch River mile 2.3 near Hwy 70 bridge

Sample Description: Clinch River m Sampler Project Name: TVA Ash Spill

TVA A-1- Coll

Project Site No.:

5

Station No.:

CLINC002.3RO

Date/Time Collected:

04/16/2009 11:58

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC 327.34-20

Billing Code: Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009

15:16

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.065J	μg/L	0.025	0.20	A Jeffries	4/22/2009

Field Determinations

Dissolved Oxygen: 11.30

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.20

675

12.76

pH Units

uMHO

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002289006

Project Name:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sample Description: Sampler Project Name: TVA Ash Spill

Project Site No.:

Sampler's Name:

Station No.:

Date/Time Collected:

CLINC004.5RO 04/16/2009 12:09

Geoff Klein

County: Sample Matrix: ROANE - 73 Water

EFO: Sampling Agency: **Billing Code:**

Knoxville TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

Priority Date:

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

Field	Determinations	
	_	

pH: 7.45

Conductivity: 768

Temperature: 13.38 **Dissolved Oxygen:** 11.70

Other:

Flow: **CFS**

pH Units

uMHO

mg/L

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	04/20/2009				A Wilson	4/20/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	310	μg/L	2.9	10	A Bass	4/27/2009

TEST: ICP-MS	ME.	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	290	μg/L	6.4	10	M Pattanayek	4/21/2009
Antimony	U	μg/L	0.33	1	M Pattanayek	4/17/2009
Arsenic	U	μg/L	0.93	5	M Pattanayek	4/17/2009
Barium	41	μg/L	2.5	5	M Pattanayek	4/17/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	4/17/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	4/17/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	4/17/2009
Cobalt	0.28J	μg/L	0.04	1	M Pattanayek	4/17/2009
Copper	4.6	μg/L	0.38	1	M Pattanayek	4/17/2009
Lead	0.87J	μg/L	0.10	1	M Pattanayek	4/17/2009
Manganese	44	μg/L	0.42	1	M Pattanayek	4/17/2009
Nickel	1.7	μg/L	0.25	1	M Pattanayek	4/17/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	4/17/2009
Silver	U	μg/L	0.03	0.25	M Pattanayek	4/17/2009
Thallium	Ü	μg/L	0.03	1	M Pattanayek	4/17/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	4/17/2009
Zinc	7.9	μg/L	1.9	5	M Pattanayek	4/17/2009

K00002289006

Project Name:

pH: Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

Sample Description: Sampler Project Name: TVA Ash Spill

Project Site No.:

Station No.:

Date/Time Collected:

CLINC004.5RO 12:09

Sampler's Name:

04/16/2009 Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC **TDEC-WPC**

Agency Invoiced: **Priority Date:**

Date/Time Received:

04/16/2009 15:16

Received By:

E McCrary

TEST:	Mercury

METHOD: EPA 245.1

Field Determinations

Dissolved Oxygen: 11.70

Conductivity:

Temperature:

Other:

Flow:

7.45

768

13.38

pH Units

uMHO

mg/L

CFS

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.080J	μg/L	0.025	0.20	A Jeffries	4/22/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit